

DETAILED ACTION

Amendments made December 18, 2009 have been entered.

Claims 23-39 and 41 remain pending.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 18, 2009 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 41 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 41 recites, "The method according to claim 23, wherein the dispersion is provided below ambient temperature for freezing". It is unclear as to what processing step "the dispersion" is being referred to; it is unclear as to if the claim is referring to the dispersion during or after blending, or before, during, or after gasifying. Additionally, the term "ambient temperature" is a relative term which renders the claim indefinite. The term "ambient temperature" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear if the ambient temperature is an unspecified freezing temperature, or a storage temperature, or some other bench mark temperature and as to what said temperature is. For example, it is unclear as to if the ambient temperature is 30C or 0C or some other

temperature. While applicant provides an example of ambient temperature, specification page 6, 10-15C, there is no guidance or definition in the disclosure for distinctly determining the temperature.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 23-33, 37, 39, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Delany (EP 0147483) in view of Brooker (US 2001/0038872 A1).

Delany teaches a method of making ice cream comprising homogenizing a mix of ingredients, aging the mix to crystallize particles of edible fat which each contain a multiplicity of individual crystals so as to form a dispersion, gasifying, and freezing the dispersion so as to form an ice cream (abstract and page 5 line 13 through page 6 line 15). As Delany teaches that the fat is crystallized prior to gasification and freezing, Delany teaches that the fat is precrystallized, i.e. crystallized before. Delany teaches that the mix comprises an emulsifier, including monoglycerides, sugar, non-fat milk solids (NFMS), and hydrogenated vegetable oil (page 9 lines 2-7, page 12 lines 26-29, page 16 lines 31-34, and page 17 lines 20-21). Delany teaches that the mix may be pasteurized before homogenization and aging, which is before the fat is precrystallized (page 13 lines 1-2). Delany teaches that the fat emulsion diameter is 1.8-21 microns (page 10 all). Delany teaches that the precrystallized particles of edible fat take the form of a globule comprising a mass of crystals of fat (page 7 lines 15-34). Delany teaches that it is desirable for small fat crystals to be formed in the ice cream because they remain in the product when the product is exposed to room temperature, thus obtaining products with less iciness, a smoother texture, better overrun better exposed to heat shock, and which has improved shelf life stability (page 7 lines 15-34, page 13 lines 12-22, and page 2 lines 14-24). Delany teaches that the mixture is homogenized to reduce the size of the fat globules (page 9 lines 30-32). Delany teaches that the mixture is aged for 2-12 hours to form crystallization of the fat (page 13 lines 12-22).

Delany teaches that the fat is injected into an aqueous mix, i.e. an aqueous ice cream precursor phase containing the other ice cream ingredients (page 9 lines 26-30). Delany teaches that the emulsifiers are combined with the fat prior to the fat being prccrystallized or combined with the other ice cream ingredients (page 12 lines 26-34). Specifically regarding claim 41, as discussed above the claim limitations are unclear, however, as the claim recites providing the dispersion at below ambient temperature for freezing, as applicant gives an example of the ambient temperature as 10-15C (specification page 6), and as Delany, page 18 line 13 through page 19 line 6, teaches that the dispersion of fat and ice cream precursors are provided at 30-40F (which is - 1.1C to 4.4C) before aging, it is believed that Delany teaches the dispersion as provided below ambient temperature as instantly claimed.

Delany is silent to the dispersion as gasified and frozen without being subject to homogenization or aging, to the edible fat particles as prccrystallized cryogenically, and to the prccrystallized fat as blended with an aqueous ice cream precursor phase as recited in claim 23, to the liquid cryogen as directed at fine particles of edible fat in a molten state as recited in claim 24, wherein the liquid cryogen is a spray as recited in claim 25, to the liquid cryogen as nitrogen as recited in claim 26, to the prccrystallized fat globules as entrapped with pockets of oil as recited in claim 27, to the ice cream precursor phase as pasteurized before being blended with the fat particles as recited in claim 32.

Brooker teaches of a method of forming a food product which includes hydrogenated fat (abstract). Brooker teaches that the food composition or the fat which is later added to the food composition are in liquid spray form and are contacted with cryogen so as to cool the liquid product, thus forming prccrystallized fat (paragraphs 0010 and 0018). Brooker teaches that the cryogen is sprayed in liquid form (paragraphs 0031 and 0032). Brooker teaches that the main aim of the invention is to provide small crystals of liquid fat corresponding to a large number of these crystals dispersed in a liquid phase of the fat structure (paragraph 0011). Brooker teaches that the product produced has a minimum crystal size, including a crystal size ideally less than 0.1 micron and that the final product with the fat crystals has an improved

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uniformity (paragraphs 0007, 0016, 0017, and 0022). Brooker teaches that the method saves time as no additional time is needed for crystallization to continue over an extended period of time, i.e. aging, (paragraphs 0008, 0020, and 0021). Brooker teaches that the spray of liquid fat is advantageously formed by atomization, preferably by urging the liquid fat through an atomizing nozzle in communication with an external source of gas, including nitrogen (paragraph 0013).

Regarding the dispersion as gasified and frozen without being subject to aging, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the precrystallized particles of fat as taught by Brooker in the ice cream taught by Delany, and thus to process the ice cream without aging. One would have been motivated to do so because Delany teaches that it is desirable to have small crystallized particles of fat in the ice cream and because Brooker teaches of a method of forming a precrystallized fat with minimal crystallize size that add improved uniformity in a final product and as the fat crystals are formed without the need for aging (which is to produce fat crystals over extended time), thus saving money on processing time and equipment. The exclusion of aging in the product processing of Delany in view of Brooker would not be destroying of the reference as the function of aging, i.e. forming fat crystals, is still accomplished by the method of Brooker.

Regarding the dispersion as gasified and frozen without being subject to homogenization, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the precrystallized particles of fat as taught by Brooker in the ice cream taught by Delany, and thus to process the ice cream without homogenization. One would have been motivated to do so because Delany teaches that it is desirable to have small crystallized particles of fat in the ice cream and because Brooker teaches of a method of forming a precrystallized fat with minimal crystallize size that add improved uniformity in a final product and as the fat crystals are formed without the need for homogenizing (which is to reduce the size of the fat), thus saving money on processing time and equipment. The exclusion of homogenization in the product processing of Delany in view of Brooker would not be destroying of the

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reference as the function of homogenization, i.e. forming reduced size fat globules, is still accomplished by the method of Brooker.

Regarding the edible fat particles as precrystallized cryogenically, wherein liquid cryogen nitrogen is sprayed and is directed at fine particles of edible fat in a molten state and the precrystallized fat globules have entrapped with pockets of oil, as stated above, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the precrystallized particles of fat as taught by Brooker, which were precrystallized cryogenically wherein liquid cryogen nitrogen is sprayed and is directed at fine particles of edible fat in a molten state in the ice cream taught by Delany. One would have been motivated to do so because Delany teaches that it is desirable to have small crystallized particles of fat in the ice cream and because Brooker teaches of a method of forming a precrystallized fat with minimal crystallize size, and using the fat forms a more uniform product with reduced processing steps. Specifically regarding the precrystallized fat globules as entrapped with pockets of oil, as the fat globules of the Brooker are produced by substantially the same method as the instantly claimed fat globules, one of ordinary skill in the art at the time the invention was made would expect that the fat globules of the Brooker, which are used in the ice cream of Delany, have substantially the same properties as the instantly claimed fat.

Regarding the precrystallized fat as blended with an aqueous ice cream precursor phase, it would have been obvious to one of ordinary skill in the art at the time the invention was made to precrystallize the fat prior to or after blending with the other food ingredients, including the other ice cream ingredients combined, which would form an ice cream precursor phase, as taught by Delany in view of Brooker, depending on which was more convenient. For example, it would have been obvious to one of ordinary skill in the art at the time the invention was made to precrystallize the fat prior to blending it with the other ingredients, if the equipment to precrystallize the fat was contained in a different location from the other ice cream ingredients and the other ice cream processing equipment and it would have been obvious to one of ordinary skill in the art at the time the invention was made to mix and pre-homogenize the other ingredients since the precrystallized fat is able to form a homogenized product without

being homogenized, as taught by Brooker. To switch the order of performing process steps, i.e. the order of the addition of the ingredients into the final mixture, would be obvious absent any clear and convincing evidence and/or arguments to the contrary (MPEP 2144.04 [R-1]). "Selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results"

Regarding the ice cream precursor phase as pasteurized before being blended with the fat particles, Delany teaches that the mix is pasteurized before the fat is precrystallized and since the method of Delany in view of Brooker forms the precrystallized fat prior to mixing with the ice cream precursor phase, it would have been obvious to one of ordinary skill in the art at the time the invention was to pasteurize the mix or ice cream precursor phase prior to being blended with the precrystallized fat particles. Furthermore, as pasteurization was known to occur at high temperatures, as precrystallization is a freezing step, and as the final product is frozen, it would have been obvious and common sense to first apply the heating steps, such as pasteurization, and then the cooling steps, such as precrystallization in order to save energy from less heat transfer and prevent the fat crystals from heat damage.

Claims 34-36 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Delany (EP 0147483) in view of Brooker (US 2001/0038872 A1), further in view of Jonas (US 4012533).

Delany in view of Brooker teaches of a method of making ice cream comprising precrystallized particles of edible fat and emulsifiers, including monoglycerides as discussed above. The references are silent to the emulsifier as a lipophilic emulsifier as recited in claim 4, including saturated monoglycerides as recited in claim 35, preferably a glycerol monostearate as recited in claim 36 and to the emulsifier as surface active and water soluble as recited in claim 38.

Jonas teaches of an ice cream type products (abstract). Jonas teaches that selection of a particular emulsifier for a fat protein system, such as the ice cream taught by Delany, may be readily determined by those skilled in the art depending on the physical properties desired in the finished product (Column 4 lines 35-40). Jonas

teaches that a monoglycerides and/or SPANS, i.e. a glycerol monostearate which is a saturated monoglyceride, is used when the fat and protein emulsions are mixed and directly whipped.

Regarding the emulsifier as a lipophilic emulsifier, including the saturated monoglyceride, preferably a glycerol monostearate which is surface active and water soluble, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a particular emulsifier in the composition of Delany depending on the properties desired in the final product as taught by Jones. To do so would be routine determination and would not impart a patentable distinction to the claims. For example, one would have been motivated to use a glycerol monostearate which is a saturated monoglyceride and a lipophilic emulsifier in the invention as taught by Delany since the fat and protein (contained in NFMS) are mixed and directly whipped, as taught by Jones. One would have been further motivated to use a surface action water soluble emulsifier, which would thus be soluble and able to mix in while adhering to the fats by surface action, in the premix ingredients, in order to form a homogenous dispersion to which the precrystallized fat would be dispersed in. To select well known ingredients for their intended function does not impart a patentable distinction to the claims.

Response to Arguments

Applicant's arguments filed December 18, 2009 have been fully considered but they are not persuasive.

Applicant argues that Delany does not teach of a precrystallized fat particle as defined in the specification, wherein crystallization occurs prior to incorporating the fat into a dispersion of other ingredients. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e. a definition of precrystallization which defines the step to which the crystallization is prior to) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the

specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Additionally, it is noted that applicant claims mixing the fat with some other ingredients, such as an emulsifier, prior to precrystallization and the limitations which are instantly claimed, including the fat as precrystallized before being combined with the ice cream precursor phase are addressed in the rejections above.

Applicant argues that Delany teaches of homogenization and aging in the ice cream forming method, which are excluded from the instant claims and that there is no suggestion to remove such processing steps and to do so would destroy the reference as Delany teaches the steps are critical and would be hindsight reconstruction.

Applicant further argues one would not have been motivated to combine the references because to combine Delany and Brooker teaches of eliminating the processing steps of Delany. Applicant's argument is not convincing as:

- It must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).
- The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).
- The test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

- In the instant case, motivation is found in some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art and does not include knowledge gleaned only from the applicant's disclosure.
 - Delany teaches:
 - It is desirable for smaller fat crystals to be formed in the ice cream because they retain the product when the product is exposed to room temperature, thus obtaining products with less iciness, a smoother texture, better overrun better exposed to heat shock, and which has improved shelf life stability (page 7 lines 15-34, page 13 lines 12-22, and page 2 lines 14-24);
 - The ice cream mixture is homogenized to reduce the size of the fat globules (page 9 lines 30-32);
 - The ice cream mixture is aged for 2-12 hours to form crystallization of the fat (page 13 lines 12-22); and
 - The fat emulsion diameter is 1.8-21 microns (page 10 all).
 - Brooker teaches:
 - A method of forming food products which includes incorporating hydrogenated fat in the foods which has been cryogenically frozen to provide small crystals of liquid fat (paragraphs 0010, 0011, 0018, 0031, and 0032);
 - The food produced has a minimum crystal size, including a crystal size ideally less than 0.1 micron and that the final product with the fat crystals has an improved uniformity (paragraphs 0007, 0016, 0017, and 0022); and
 - The method saves time as no additional time is needed for crystallization to continue over an extended period of time, i.e. aging, (paragraphs 0008, 0020, and 0021).

- It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the precrystallized particles of fat, which were precrystallized cryogenically in the ice cream taught by Delany in view of Brooker. One would have been motivated to do so because Delany teaches that it is desirable to have small crystallized particles of fat in the ice cream and because Brooker teaches of a method of forming a precrystallized fat with minimal crystallize size that adds improved uniformity in a final product and because the method of Brooker eliminates the need for aging and homogenization in forming the reduced size fat crystals, thus saving money on processing time and equipment.
 - Regarding the dispersion as gasified and frozen without being subject to homogenization, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the dispersion to be gasified and frozen without being subject to homogenization because:
 - Delany teaches that homogenization is used to form small fat globules of about 1.8-21 microns;
 - Delany teaches that smaller crystals form a better product because they retain when the product is exposed to room temperatures;

- Brooker teaches that precrystallized particles of fat are formed without homogenization at a size of 0.1 microns;
- It would be common sense to one of ordinary skill in the art that if a processing step could be removed and substantially the same or an improved product could be formed to remove the step would save money on processing time and equipment.
- By using the small precrystallized fat particles as taught by Brooker in the ice cream as taught by Delany, the need for homogenization, i.e. for forming small globules of fat, is removed, thus eliminating a processing step and saving on processing time or equipment. The exclusion of homogenization in the product processing of Delany in view of Brooker would not be destroying of the reference as the function of homogenization, i.e. forming reduced size fat globules, is still accomplished by the method of Brooker.
 - Regarding the dispersion as gasified and frozen without being subject to aging, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the dispersion to be gasified and frozen without being subject to aging because:

- Delany teaches that aging is utilized to form the small crystallized particles of fat;
- Brooker teaches that precrystallized particles of fat are formed without homogenization at a size of 0.1 microns;
- Brooker teaches a method of forming small crystallized particles of fat which saves time, and thus money, as no additional time is needed for crystallization to continue over an extended period of time, i.e. aging
- It would be common sense to one of ordinary skill in the art that if a processing step could be removed and substantially the same or an improved product could be formed to remove the step would save money on processing time and equipment.
- By using the precrystallized fat particles as taught by Brooker in the ice cream as taught by Delany, the need for aging, i.e. for forming crystallized globules of fat, is removed, thus eliminating a processing step and saving on processing time or equipment. The product processing of Delany in view of Brooker would not be destroying of the reference as the function of aging, i.e.

forming crystallized fat globules, is still accomplished by the method of Brooker.

- Although Delany teaches that the steps of aging and homogenization are critical, Delany teaches the function of the steps is where the criticality lie and as Brooker teaches of different steps which perform the same function, the criticality of the process as taught by Delany is maintained in the combination of Delany in view of Brooker; i.e. applicant's argument is not convincing as Delany teaches that the criticality is improved stability achieved by selecting a specific oil, homogenizing the mix of ingredients to form an emulsion having a narrow distribution of small diameter fat globules, and aging the emulsion to crystallize the fat globules prior to whipping (abstract), and as the combination of Delany and Brooker maintains the critical function of selecting a specific oil and forming small diameter fat globules which are crystallized prior to whipping.

Applicant argues that there is no motivation to precrystallize the fat prior to blending with the other ice cream ingredients. Applicant's arguments are not convincing. As stated in the previous office action and herein, it would have been obvious one of ordinary skill in the art at the time the invention was made to precrystallize the fat prior to blending it with the other ingredients, if the equipment to precrystallize the fat was contained in a different location from the other ice cream ingredients and the other ice cream processing equipment and it would have been obvious to one of ordinary skill in the art at the time the invention was made to mix and pre-homogenize the other ingredients since the precrystallized fat is able to form a homogenize product without being homogenized, as taught by Brooker. Furthermore, to switch the order of performing process steps, i.e. the order of the addition of the ingredients into the final mixture, would be obvious absent any clear and convincing evidence and/or arguments to the contrary (MPEP 2144.04 [R-1]). "Selection of any order of performing process steps is *prima facie* obvious in the absence of new or

unexpected results". At the present time, applicant has not provided evidence of new or unexpected results due to the order of the processing steps. Applicant further argues criticality of the order of processing steps because Delany teaches critical steps. Applicant's argument is not convincing as, as discussed above, the criticality of the steps of Delany lie in the function and the combination of the references maintain the critical function. No criticality is shown in the references regarding the fat as precrystallized prior to or after blending with other ingredients.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KELLY BEKKER whose telephone number is (571)272-2739. The examiner can normally be reached on Monday through Friday 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kelly Bekker/
Examiner
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